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The impact of physical activity on chronic obstructive pulmonary disease hospitalization: A prospective study in Iran

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Abstract:

BACKGROUND: Decreasing hospitalization as a result of chronic obstructive pulmonary disease (COPD) exacerbations is a major objective in an effective process of the disease management. This study aimed to investigate the association between physical activity level in COPD patients, and specific-cause hospitalization in a prospective study of patients referred to a pulmonologist office in Qazvin, Iran.

MATERIALS AND METHODS: A prospective study was conducted among 150 patients with COPD from the population of Qazvin, a North West, industrialized city of Iran, from December 2017 to December 2018. Participants were enrolled among patients who referred to an outpatient respiratory care center to undertake respiratory function tests. Patients were followed up for 1 year and their related measures were gathered and recorded at two phases including baseline and 12 months. To assess the effect of several covariates on the response variable, a multivariate regression analysis was applied. Results were reported in the form of odds ratios, incident rate ratio (IRR), and their 95% confidence intervals (CIs).

RESULTS: The study findings revealed that individuals with severe pulmonary obstruction (<30%) were 4.21 times more likely to be hospitalized than those with a mild level of disease. Furthermore, the likelihood of hospitalization was ≥ 3 times higher among current smokers compared with nonsmokers. The history of hospitalization due to COPD 1 year before the enrolment was another significant factor which increased 21% the odds of being hospitalized during follow-up. In a multivariate model with the number of hospitalizations as an outcome variable, patients who reported moderate level of physical activity encountered a lower risk of COPD hospitalization compared to those who had a very low level of physical activity (IRR = 0.66; 95% CI = 0.44–0.92; $P = 0.001$).

CONCLUSIONS: To decrease the risk of hospitalization among COPD patients, it is recommended to include regular physical activity in their integrated care program.

Keywords:

Chronic obstructive pulmonary disease, exacerbation, hospitalization, physical activity

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